

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
2 June 2005 (02.06.2005)

PCT

(10) International Publication Number  
**WO 2005/049679 A3**

(51) International Patent Classification<sup>7</sup>: **C08G 65/332**,  
C02F 5/10, C11D 1/00, 3/37

Maria [NL/NL]; Lombardi 142, NL-6708 LV Wageningen (NL).

(21) International Application Number:  
PCT/NL2004/000807

(74) Agents: **VAN WESTENBRUGGE**, Andries et al.; Nederlandsch Octrooibureau, Scheveningseweg 82, P.O. Box 29720, NL-2502 LS The Hague (NL).

(22) International Filing Date:  
18 November 2004 (18.11.2004)

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
03078632.1 19 November 2003 (19.11.2003) EP

(71) Applicant (*for all designated States except US*): **STICHTING VOOR DE TECHNISCHE WETENSCHAPPEN** [NL/NL]; Van Vollenhovenlaan 661, NL-3527 JP Utrecht (NL).

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **KEURENTJES**, Johannes, Theodorus, Faustinus [NL/NL]; Gerwenseweg 27, NL-5708 EH Helmond (NL). **CUSTERS**, Johannes, Petrus, Aldegonda [NL/NL]; Willem Barentzstraat 24, NL-5612 KL Eindhoven (NL). **KELEMEN**, Peter [SK/SK]; Muraniho 26, 949 01 Nitra (SK). **TIMMER**, Johannes, Martinus, Koen [NL/NL]; Bospoort 11a, NL-6711 BT Ede (NL). **VAN DEN BROEKE**, Leo, Jacques, Pierre [NL/NL]; Olympiaweg 71-D, NL-1076 VR Amsterdam (NL). **COHEN STUART**, Martinus, Abraham [NL/NL]; Hartenseweg 44, NL-6705 BK Wageningen (NL). **LEERMAKERS**, Franciscus, Adrianus,

**Published:**

— with international search report

(88) Date of publication of the international search report:  
2 February 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: HIGH-MOLECULAR WEIGHT NON-IONIC SURFACTANTS COMPRISING ANIONIC TERMINAL END GROUPS

(57) Abstract: The present invention relates to high molecular weight non-ionic surfactants comprising terminal anionic end groups or salts thereof, a process for the preparation of such surfactants and the use of such surfactants in decreasing the hardness of aqueous systems, desalination or softening of water, removal of heavy metals from aqueous systems contaminated with such metals, and in industrial and domestic wash processes and products used for such processes.

WO 2005/049679 A3